

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
26 May 2005 (26.05.2005)

PCT

(10) International Publication Number
WO 2005/047736 A1

(51) International Patent Classification⁷: **F16H 37/08**, 37/10

(21) International Application Number:
PCT/GB2004/004736

(22) International Filing Date:
10 November 2004 (10.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0326199.7 10 November 2003 (10.11.2003) GB

(71) Applicant (for all designated States except US): **TORO-TRAK (DEVELOPMENT) LIMITED** [GB/GB]; 1 Aston Way, Leyland, Lancashire PR26 7UX (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **OLIVER, Robert, Andrew** [GB/GB]; 69 Townsway, Lostock Hall, Preston PR5 5YQ (GB).

(74) Agent: **W.P. THOMPSON & CO.**; Coopers Building, Church Street, Liverpool, L1 3AB (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

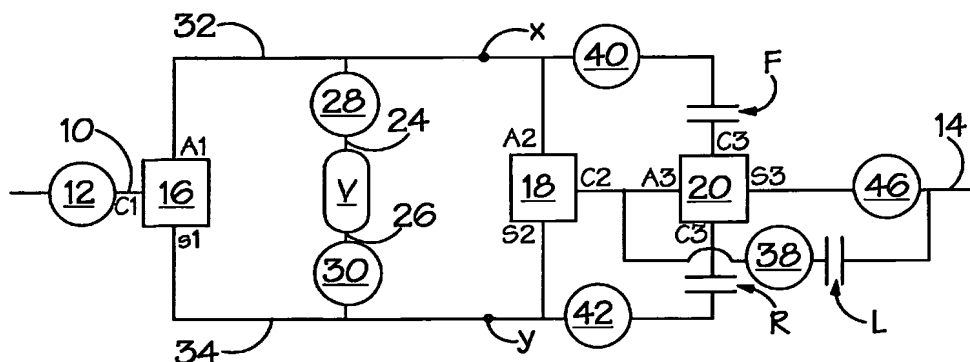
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CONTINUOUSLY VARIABLE RATIO TRANSMISSION



(57) Abstract: A continuously variable ratio transmission (CVT) comprises a ratio varying unit ("variator"), a first epicyclic (18) having two inputs (A2, S2) connected to opposite sides of the variator (V), a second epicyclic (16) having an input (C1) driven by a prime mover (12) and components (A1, S1) connected to opposite sides of the variator, a final drive shaft (14), a low regime clutch (L) for selectively connecting the output of the first epicyclic to the final drive shaft in low regime and a third, mixing, epicyclic (20) connected to the output (C2) of the first epicyclic (18) and connected or connectable (F, R) to the variator and being connectable with the final drive shaft in high regime by way of a high regime clutch (F). The high and low regimes are coincident at at least one variator ratio (or, more preferably, the operation ranges overlap) and the variator operates in opposite directions in the low and high regimes.

WO 2005/047736 A1